traditional rules do not represent the actual pronunciation of the Romans commend themselves as sound. He does not make it clear, however, that precisely the same objections apply to the traditional syllable-division in Greek, nor has he given due consideration to the evidence of the Romance languages.

In a few minor details the writer is unable to accept Professor Bennett's conclusions, as for example, on the question of the nasalization of vowels before *ns* and *nf*, but he has no hesitation whatever in cordially commending the *Appendix* as a whole, and in advising all teachers of Latin to add it to their libraries.

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Elementary Chemistry. By GEORGE RANTOUL WHITE, Instructor in Chemistry in Phillip's (Exeter) Academy. 272 pages. Ginn & Co.

THIS book shows the marks of careful preparation and of much thought and ingenuity in the selection and arrangement of material. Its peculiar features are an almost complete disuse of chemical formulæ and its attempt to teach the history as well as the theory of chemistry by illustrative experiments. The book consists of three parts. Part I includes directions and descriptions for performing thirty-four laboratory exercises. These comprise a study of oxygen, hydrogen, sulphur, phosphorus, carbon, chlorine, and nitrogen, together with the following metals, iron, mercury, zinc, copper, magnesium, calcium, sodium and potassium. Part II consists of fourteen additional laboratory exercises on the following elements and their principal compounds: Bromine, iodine, fluorine, arsenic, antimony, bismuth, tin, lead, silver, gold, platinum, aluminum. Both parts I and II are simply directions for performing laboratory work with questions directing the student's attention to the thing to be observed. The elements mentioned above are nowhere described in the book, and the student is expected to obtain his knowledge of them from direct contact in the laboratory. Part III, on the history and development of the laws and theory of chemistry, is the unique portion of the book. The author illustrates this portion of the subject by calling on the student to perform many of the classic experiments which have helped or hindered the progress of chemistry. The chapter on the alche-

mists is illustrated by three experiments; (1) A so-called transmutation; (2) The death of a metal; (3) The resurrection of a metal. The period of Robert Boyle is emphasized by calling on the student to perform Boyle's law and to make certain chemical and physical tests made by him. The pneumatic period of chemical history is illustrated by exercises on the weight and specific gravity of air, hydrogen, carbon-di-oxide and illuminating gas. Lavoisier's contributions to the cause of science are illustrated by several experiments on the law of the conservation of mass.

The modern period is illustrated by several determinations of atomic weight, several of molecular weight, by exercises on the law of definite proportions, the law of multiple proportions, and the law of combination by volume. The subjects of specific heat, isomorphism, and the periodic law are also discussed and illustrated. This part of the book contains full discussions and statements of historical value together with the experiments already described. The appendix contains much valuable matter in regard to general manipulation.

The theory upon which the book proceeds is that the student cannot, or should not, learn the laws and theory of chemistry before he has acquired a very wide knowledge of facts. The student who performs the exercises in parts I and II will get a fairly comprehensive view of the principal elements and their compounds; but he will have finished all this and be nearing the end of his year's work before he knows anything about the law of definite proportions, the law of conservation of mass or, in fact, any law of modern chemistry. Would not a judicious mixing of fact and theory, of illustration and law, produce better results? We have some doubts as to the wisdom of placing all this work on the elements before any theory is introduced. Yet in the hands of the author of the book, and those trained under him, we have no doubt that it would be an interesting and profitable course.

The ideal text-book in chemistry has not been written and probably never will be; for the method of presentation which commends itself to one teacher will not find favor in every particular in the eyes of another. Two things, however, will, in our opinion, appear in future text-books; first, a set of laboratory directions, clear, definite, pointed, and contained in a book bound separately from the text; second, a text which shall give in connected form a good description of the elements. The latter should be consulted by the student after he has performed the exercises of his laboratory manual. This plan is

found in Professor Remsen's Advanced Manual. On the whole the book before us we have found helpful and suggestive.

A few minor criticisms may be noted. On page ix, "The writers do not seem to realize how vast an *accumulation* of facts now *lie* open to the chemist;" an extensive and unnecessary use of the word *caution!* in describing experiments.

R. H. CORNISH

MORGAN PARK ACADEMY

Deutsche Zeitschrift für Ausländisches Unterrichtswesen, edited by DR. J. WYCHGRAM, Leipsic. Voigtlander. Price, 10 marks.

THIS journal, advance notices of which were sent to many American teachers some weeks ago, began its publication in October. It is one of the encouraging signs of the times that Germany is joining other nations of the world in looking abroad for educational inspiration. While she has no need to send her young men away from home for university training, she has been far more progressive than any other nation in translating whatever is best from other languages into her own. An English work like Salmon's Algebra, an Italian work like Veronese's last contribution on the Foundations of Geometry, a French work like Serret's on Calculus, or a Russian work like Somoff's Mechanics, all these at once appear in German, occasionally in French, less often in Italian, rarely in English. It is in the same spirit that this new Zeitschrift has been started by Dr. Wychgram. In his introduction he calls attention to the unity of interest in Germany and abroad in certain educational movements. Advocates of manual training must be in touch with the movement in Finland and the Scandinavian countries. The education of women is a question in which Germany can well afford to look to France, England and North America, while University Extension is a movement not to be neglected.

A list of well-known contributors is given, representing most of the educational centers, and the number will doubtless be enlarged. Our own country is represented by such men as Dr. Butler, Dr. Hall, Dr. Monteser of New York, Dr. Russell of Colorado, W. S. Monroe of Leland Stanford, and by the editor of the SCHOOL REVIEW.

The first number is an excellent piece of work, topographically and scholastically. It occupies 110 pages with the following list of articles: